

Claims

1. A process for making paper comprising adding to a paper stock an effective amount for reducing the deposition of white pitch of at least one cationic coagulant polymer or an inorganic coagulant and followed by the addition of a microparticle material, wherein the paper stock contains pulp derived at least in part from recycled paper products.
2. A process according to Claim 1 wherein the microparticle material is selected from the group consisting of swellable clay materials, cross-linked polymer, colloidal silica, borosilicate or a suspension of microparticulate anionic material selected from bentonite, colloidal silica, polysilicate microgel, polysilicic acid microgel and crosslinked microemulsions of water soluble monomeric material and mixtures thereof.
3. A process according to Claim 2 wherein the microparticle material is an anionic material.
4. A process according to Claim 2 or Claim 3 wherein the microparticle material is a swellable clay from the smectite family.
5. A process according to any of Claims 2 to 4 wherein the microparticle material is a mineral consisting essentially of bentonite, montmorillonite, saponite, hectorite, beidilite, nontronite, fullers' earth and mixtures thereof.
6. A process according to any preceding Claim wherein the microparticle material is a mineral composed primarily of bentonite.
7. A process according to any preceding Claim wherein the cationic coagulant polymer is a homopolymer containing recurring cationic groups or a copolymer of at least 80% by weight cationic monomer and 0 to 20% by weight acrylamide or other non-ionic monomer.

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8. A process according to Claim 7 wherein the cationic groups are derived from diallyl dimethyl ammonium chloride and dialkylaminoalkyl (meth)-acrylates and -acrylamides or quaternary ammonium salts thereof.
9. A process according to Claim 8 wherein the cationic groups are dimethylaminoethyl acrylate or methacrylate quaternary ammonium salt.
10. A process according to any of Claims 1 to 7 wherein the coagulant is a dicyandiamide polymer, a polyamine or a polyethyleneimine.
11. A process according to any of Claims 1 to 6 wherein the coagulant is selected from the group consisting of alum, lime, ferric chloride, polyaluminum chloride, ferrous sulfate and mixtures thereof.
12. A process according to any of Claims 1 to 7 wherein the coagulant is a polyalkylenepolyamine prepared by the reaction of an alkylene polyamine with a difunctional alkyl halide.
13. A process according to any of Claims 1 to 7 wherein the coagulant is a cationic polyelectrolyte that is a poly(diallyl di (hydrogen or lower alkyl) ammonium salt having a number average molecular weight greater than 300,000 but less than 2,000,000.
14. A process according to Claim 13 wherein the microparticle material is a mineral composed primarily of bentonite.
15. A paper product made according to the process of any of Claims 1 to 5 or 7 to 13.
16. A paper product made according to the process of Claim 6.
17. A paper product made according to the process of Claim 14.